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TITLE: Scratch resistant IR absorption filter made by coating process - comprises filter with IR absorbing layer contg. (meth)acrylate copolymer on transparent resin substrate and scratch resistant coating

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PRIORITY-DATA: 1990JP-0303241 (November 7, 1990)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 04174403 A	June 22, 1992	N/A	013	G02B 005/22

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
JP 04174403A	N/A	1990JP-0303241	November 7, 1990

INT-CL (IPC): G02B001/10, G02B005/22

ABSTRACTED-PUB-NO: JP 04174403A

BASIC-ABSTRACT:

The IR absorbing layer is made of (a) 100 pts. wt. copolymer made of 50 - 90 pts. wt. of meth acrylate, ethyl acrylate, methyl methacrylate or ethyl methacrylate, and 10 - 40 pts. wt of hydroxy methy acrylate, hydroxy ethyl acrylate, hydroxy propyl acrylate, hydroxy methyl methacrylate, hydroxy ethyl methacrylate, hydroxy propyl methacrylate, or a (meth)acrylic acid cpd. having an amide group, a (meth)acrylic acid compound having a nitrile group, a (meth)acrylic acid compound having an epoxy group, and (b) 0.025 - 5 pts. wt. of an IR absorbing agent chosen from aminium (sic) type, metal complex type, anthraquinone type and dilmonium type, and the scratch resisting layer is made of (i) 100 pts. wt. of a hydrolysed substance and partially condensation prods. of a mixt. of alkoxy silanes of R1Si(OR2)3 and Si(OR3)4 R1, R1 and R3 methyl, ethyl or propyl group) at the molar ratio of 7:3 - 10.0, (ii) 2.5 - 10 pts. wt. of SiO2 powder, (iii) 1.5 - 3.5 pts. wt. of a copolymer made of 60 - 90 pts. wt. of methyl or ethyl (meth)acrylate, and 10 - 40 pts. wt. of a hydroxy meth(or ethyl or propyl) (meth)acrylate, a (meth)acrylic acid compound having an amide (or nitril) group, (iv) 0.75 - 2 pts. wt. of an epoxy resin, and (v) 0.25 - 1 pts. wt. of a hardening catalyst.

USE/ADVANTAGE - The IR absorption filter has a high surface hardness, and since the IR absorption layer mainly contains a polymer, the capacity of the IR absorption is not damaged by heat-decomposition and the selectivity of the absorption of the specific wave length can be raised. The product shows very high function, reliability, durability and can be used in many fie

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: SCRATCH RESISTANCE INFRARED ABSORB FILTER MADE COATING PROCESS